

What is claimed is:

1. A method for regulating, controlling or modulating aqueous humor secretion,
5 comprising the step of administering to ciliary epithelial cells of the aqueous humor, an effective secretion-modulating amount of a pharmaceutical composition comprising a modulator of one or more antiports:
2. The method of claim 1, wherein the one or more antiports are selected from the group consisting of a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.
- 10 3. The method of claim 1, wherein the one or more antiports comprise a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.
4. The method of claims 1-3, wherein secretion in the aqueous humor cells is elevated, and wherein the modulator is administered in an amount, sufficient to reduce the elevated secretion.
- 15 5. A method for regulating, controlling or modulating fluid pressure in aqueous humor ciliary epithelial cells, comprising the step of administering to said cells an effective pressure modulating amount of a pharmaceutical composition comprising a modulator of one or more antiports.
6. The method of claim 5, wherein the one or more antiports are selected from the
20 group consisting of a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.
7. The method of claim 5, wherein the one or more antiports comprise a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.
8. The method of claims 5-7, wherein the fluid pressure is elevated, and wherein the modulator is administered in an amount, sufficient to reduce the elevated pressure.
- 25 9. The method of claims 1-8 wherein the Na^+/H^+ exchange occurs at the NHE-1 antiport.
10. The method of claims 1-8, wherein the $\text{Cl}^-/\text{HCO}_3^-$ exchange occurs at the AE2 antiport.
11. The method of claims 1-10, wherein the modulating effect is reversible upon
30 cessation of administration of the modulator.
12. A method for regulating, controlling or modulating fluid pressure in aqueous humor ciliary epithelial cells of an individual, comprising the step of

administering to the individual an effective intraocular pressure-modulating amount of a pharmaceutical composition comprising a modulator of one or more antiports.

13. The method of claim 12, wherein the one or more antiports are selected from the group consisting of a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.

14. The method of claim 12, wherein the one or more antiports comprise a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.

15. The method of claims 12-14, wherein the Na^+/H^+ exchanger comprises NHE-1.

16. The method of claims 12-14, wherein the $\text{Cl}^-/\text{HCO}_3^-$ exchanger comprises AE2.

17. The method of claims 1-16, wherein the modulator is administered to the cells *in vitro*.

18. The method of claims 1-16, wherein the modulator is administered to the cells *in vivo*.

19. A method for regulating, controlling or modulating intraocular pressure in an individual, comprising the step of administering to the individual an effective intraocular pressure modulating amount of a pharmaceutical composition comprising a modulator of one or more antiports.

20. The method of claim 19, wherein the one or more antiports are selected from the group consisting of a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.

21. The method of claim 19, wherein the one or more antiports comprise a Na^+/H^+ exchanger and a $\text{Cl}^-/\text{HCO}_3^-$ exchanger.

22. The method of claim 19-21, wherein the intraocular pressure is elevated, and wherein the modulator is administered in an amount, sufficient to reduce the elevated intraocular pressure.

23. The method of claims 12-24, wherein the Na^+/H^+ exchanger comprises NHE-1.

24. The method of claims 12-24, wherein the $\text{Cl}^-/\text{HCO}_3^-$ exchanger comprises AE2.

25. The method of claims 12-24, wherein the modulating effect is reversible upon cessation of administration of the modulator.

26. The method of claims 1-25, wherein the modulator comprises a modulator of Na^+/H^+ exchange.

27. The method of claims 1-25, wherein the modulator comprises a modulator of $\text{Cl}^-/\text{HCO}_3^-$ exchange.

28. The methods of claims 19-27, wherein the individual suffers from glaucoma.
29. The methods of claims 19-27, wherein the individual is subject to glaucoma.
30. The method of claims 1-29, wherein the modulator is selected from the group consisting of beta blockers, amilorides and cariporide.
- 5 31. The method of claim 30, wherein the modulator comprises a beta blocker.
32. The method of claim 31, wherein the beta blocker comprises timolol.
33. The method of claim 30, wherein the modulator comprises an amiloride or amiloride analog.
34. The method of claim 33, wherein the amiloride comprises either amiloride or
10 ethyl-isopropyl-amiloride.
35. The method of claim 30, wherein the modulator comprises cariporide.
36. The method of claims 1, 5, 12 or 19, wherein an anion is transferred into the ciliary epithelial cells of the aqueous humor to block native chloride channels.
37. The method of claim 36, wherein the anion comprises cyclamate.
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